

Mark Cyzyk. Book Review: David Crane, et. al. *Ajax in Action*, in *Technology Electronic Reviews* v13 (3), December 2006.

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REVIEW OF: Dave Crane and Eric Pascarello, with Darren James. (2006). *Ajax in Action*. Greenwich, CT: Manning. (ISBN 1-932394-61-3). 650 pp. \$44.95

By Mark Cyzyk

The sheer size of this book is daunting. It's been my sense that discussions of the technologies falling under the heading "Ajax" has hitherto been short and sweet, always with the ubiquitous "Drop-Down-Box-of-Zip-Codes-Mapped-to-State-Abbreviations" example at the ready. Not so this book!

But first, what is Ajax?

Ajax is an acronym for "asynchronous Javascript and XML". Simply stated: Ajax is the label we use to refer to that set of technologies embedded in all modern Web browsers whereby client-side, programmatic access via Javascript to server-side data in the form of XML is made available, specifically through the modern browser's support for a Javascript object: XMLHttpRequest. In short: Ajax is both a technology and a method for retrieving server-side data, then displaying it via client-side Javascript and Cascading Stylesheets seamlessly, on a single page, without the sometimes annoying (to the user) "Hold everything while I do something here" page refreshes required of traditional Web application programming.

This book, however, goes so far beyond this that it's difficult to know where to start.

The book is divided into four broad sections: "Rethinking the Web Application"; "Core Techniques"; "Professional Ajax"; and "Ajax by Example". And the chapter headings within these sections provide a good description of the content of the book and of how its narrative proceeds:

A new design for the Web
First steps with Ajax
Introducing order to Ajax
The page as an application
The role of the server

The user experience
Security and Ajax
Performance
Dynamic double combo
Type-ahead suggest
The enhanced Ajax web portal
Live search using XSLT
Building stand-alone applications with Ajax

The book itself, of course, does start with an explanation of what Ajax is, why it's needed, and how an Ajax-based application differs from the architecture of a traditional Web application. It begins with a nice overview of the elements of client-side scripting: Javascript, Cascading Stylesheets (CSS), and the Document Object Model (DOM). In particular, it provides a very nice, understandable explanation of the DOM and of how individual nodes in the DOM can be addressed and thus programmatically manipulated. The combination of these three technologies provide the foundation for purely client-side scripting.

Almost immediately then, in Chapter Three of a thirteen-chapter book, the authors make the bold proposal, which forms the basis for the rest of the book, that traditional Web applications be rearchitected and rewritten so that they execute almost exclusively in the client, making only the occasional call back to the Web server to retrieve data, and this, always behind the scenes. This is, in sum, a description of the new and widely publicized "Web 2.0" rubric. The purpose of this book is therefore not to just introduce Ajax-based techniques for creating some nifty user interface (UI) widgets. The purpose of the book is to propose that the traditional way of architecting Web applications, with the application logic and HTML-based UI generation residing server-side, be replaced with a client-focused, Ajax-based architecture. And so the main thrust of the book begins.

In particular, Chapters Four and Thirteen - "The page as an application" and "Building stand-alone applications with Ajax" - flesh out this new application architecture. Here one finds not only a comprehensive discussion and illustration of how an Ajax-based application as a whole could be written to adhere to the Model-View-Controller (MVC) design pattern, but also how the native browser's event handling mechanism can be massaged and complemented so that it more properly functions within the Observer design pattern. The authors, throughout the book, are all about adherence to design patterns and so-called best practices, so in addition to providing clear instruction on specific Ajax tips and techniques, the book also serves as a sort of primer in software engineering. The second of these two chapters details how data is dealt with in an Ajax environment, including how one might construct an Ajax-based application without the foundational presence of a backend server.

The rest of the book provides examples of Ajax in action including optimizing the user experience using Ajax techniques, securing Ajax-based applications, optimizing performance of Ajax/Javascript code, and detailed illustration and discussion of an Ajax-based double combo box (two HTML select boxes linked, such that a change in the contents of one changes the contents of its linked relation) and a "type-ahead suggest" widget, similar to what is currently found in the widely implemented Google toolbar.

While Ajax is certainly a hot topic these days, with Service Oriented Architecture (SOA), "enterprise mashups", and Ajax as the glue holding it all together being the rage in the trade publications, it is my personal opinion that the jury is still out on whether it is advisable to write entire applications exclusively using Ajax technologies and techniques. However, if doing so is something you decide to do, perhaps to push computationally-intensive tasks out to otherwise idle client workstations, because server-side middleware is unavailable or unappealing, or maybe even because in the middle of the night you suddenly decided to write an entire Office Productivity Suite to run exclusively within a Web browser (as a few companies are now attempting to do), then this book should prove to be indispensable!

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